

COMPETITIVENESS OF MEXICAN AVOCADO EXPORTING COMPANIES TO THE UNITED STATES OF AMERICA

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ABSTRACT

This study investigated the competitive factors of 25 avocado exporting companies located in Uruapan, Michoacán (Mexico). This cradle in a census of the twenty-five exporting companies, which its organization, its objectives and its problematic production could be known. The documentary investigation focused to the knowledge of the main theories on International Commerce as well as the situation of the market of this product at world-wide level. It exists the hypothesis to explain that "The relation that exists between the exporting companies from avocado to the United States of America, located in Uruapan, Michoacan, and its competitiveness depends on the quality of the fruit that takes place for export, of its price, the used technology, the qualifications of its personnel, and of the channels of distribution".

Key Words: Competitiveness, Avocado, Exporting.

INTRODUCTION

The opening of the U.S. market in November 1997 to the commercialization of Mexican avocado production was an excellent opportunity to develop a market in a culture that tended to consume natural foods, of good quality; within that a considerable amount of Mexican customary incorporating the avocado in its diet is included. Mexico's state of Michoacan, in particular the Uruapan municipality, is the largest producer of Hass avocados in the world. Proximity to the large U.S.

market of 275 million habitants with high spending power was a unique business opportunity to take advantage of the efficient network of drug dealers with ample experience in the handling of the avocado.

Problematic of the industrial sector the radical process of commercial opening adopted by Mexico as of the decade of eighties, generated challenges and opportunities for several Mexican companies but the question of how competitive problems in customary companies to work in protected markets. These distortions with serious social effects are related directly to the competitiveness. One critical issue for the Mexican avocado industry has been U.S. import regulations that have often denounced as green barriers. These regulations concern agricultural pesticide use as well as quality and maturity standards. In spite of the NAFTA, the U.S. has continued to impose six cents per pound tariff avocado imports from Mexico but not on avocado imports from countries such as Chile and the Dominican Republic. With the entry of Mexico into the General Agreement On Tariffs and Commerce (GATT) in 1986, the export of Michoacan's avocados has experienced a number of diverse problems. Noncompetitive intermediaries have assumed greater control over avocado commercialization and distribution. Strong U.S. policies protecting the U.S. California avocado industry have continued (Sánchez, 1991, 45). The Mexican avocado sector is underorganized with production automation and commercialization having fallen behind that of other avocado producing countries such as Chile, Israel, the U.S., and Spain. There has been very little research on the competitive success factors of Mexican firms, much less those exporting to the U.S. (Ceballos 1993, 167). By identifying the competitiveness factors for Mexican avocado exporting firms, this study will advance current knowledge about competitive factors for organizations in the Mexican agricultural sector that are dependent on exports to the U.S.

RESEARCH METHODOLOGY

Sample

The total of investigation elements that constitutes the area of analytic interest is all the companies that export avocado to United States of America, located in Uruapan, Michoacan, based on the Plan of Work For the Export of Avocado Hass from Mexico to United States of America from June of 1997, and modernized this way in August of 2001, the population is finite, for what you proceeded to make a census and to apply the questionnaire to each company with base in the list of exporters of Avocado Association of Exporters and Packers of Mexican Avocado obtaining the following thing: the universe is of ninety five companies that take place, they pack, they market and they export the avocado from Michoacan's State.

The sample for this research study were 25 Mexican companies that exported Michoacan's avocados to the U.S.A. Are the population that is registered letter by the Agencies of Government of the United States of America (United States Department of Agriculture, USDA) for the export of the Michoacan's avocado and are twenty-five companies mentioned in table 1.

Mexico (2002) participated with 34% of the world production of avocado. Of the 802,000 tons that were harvested in our country in 1996 in an extension of 98,150 hectares, Michoacan collaborated with 81%, with a yield average of 8 tons for hectare. Their exports ascended to 46,616 tons, being the main destinations: France 55%, Canada 16%, Korea 10%, Japan 7%, United States 8% and Switzerland 4%. The mobilization of this great production volume toward the consumption centers and their distribution, among the population, they required of a process that he/she went modifying when running of the time; where it has been had to include the middlemen.

Table 1. Organizations in the Study

Nº	Companies
1	Agrícola TREDI, S.A. de C.V.
2	Aguacates Frutas de Michoacán, S.A. de C.V.
3	Aguamich, S.A. de C.V.
4	AMIMEX, S.A. de C.V.
5	AVOFRUT, S.A. de C.V.
6	Avopack, S.A. de C.V.
7	AVOPER, S.A. de C.V.
8	Best Farmer, S.A. de C.V.
9	Calavo, S.A. de C.V.
10	Chiquita, S.A. de C.V.
11	Del Rey, S.A. de C.V.
12	Dovi, S.A. de C.V.
13	ECO, S.A. de C.V.
14	Empacadora El Durazno, S.A. de C.V.
15	Fresch Direction Mexicana, S.A. de C.V.
16	Frutas Finas de Michoacán, S.A. de C.V.
17	Grupo Purépecha, S.A. de C.V.
18	Henry, S.A. de C.V.
19	INDEX, S.A. de C.V.
20	Mc Daniel, S.A. de C.V.
21	Misión de México, S.A. de C.V.
22	San Lorenzo, S.A. de C.V.
23	Tropic de México, S.A. de C.V.
24	Vifrut, S.A. de C.V.
25	West Pack, S.A. de C.V.

Source: Association of Productores and Packers of Avocado from Michoacán, A.C.

GENERAL MODEL Ex dice.

The general model, in which the relation between the quality, the price, the technology, the qualification and the channels of distribution presented/displayed like independent variables and the competitiveness like dependent variable is described:

Figure 1. Diagram of variables.

Independent variables	Dimension	Dependent variable
Quality	Norms of quality	Competitiveness
	Systems of control of quality	
	Systems of inspection of quality	
Price	Market	
	Production costs	
Technology	Commercialization costs	
	Machinery and team	
Training	Infrastructure	
	Education	
	Training systems	
Distribution channels	Investment	
	Design of the distribution channel	
	Administration of the distribution channel	
	Embark	

Source: Elaboration characteristic with base in the obtained Theoretical Marco's heady results of the documental investigation.

Questionnaire

Following a pre-test with 11 organizations, the interview questionnaire consisted of a total of 38 questions. Information was collected regarding: product quality, market price, production technology, personnel training, distributional channels, and overall competitiveness.

Product quality scale scores were based on 10 questions that asked respondents to define the quality of the product, norms of product quality, quality control systems, and inspection systems. Product price scale scores were based on seven questions regarding export market price and production costs. Production technology scale scores were based on six questions regarding technology used, the presence of technical consultants, the degree of modernization, and technology investment. Training level was determined by eight questions that asked about the provision of operational and administrative personnel training and technical qualification systems. The nature of product distribution channels was measured by seven questions that asked about the nature of distribution channels and storage facilities used by the company. The overall competitiveness of companies was determined by thirty eight questions that asked respondents all about competitiveness.

In the design of the questionnaire the situation of indecision was not managed because it is not very probable that this happens. Also, they didn't think about the individual's reactions to study as of agreement or in disagreement, but in such a way that allows obtaining the answers to the outlined questions. Therefore, the mensuration scale is integrated with the following assigned values 4, 3, 2, 1 that correspond to: totally of agreement, of agreement in general, in disagreement in general and totally in disagreement, respectively.

To evaluate to the mensuration instrument, the pre-test procedure was used, suggested by Bohrnstedt (Bohrnstedt 1976, 103), and the Reliability Coefficients Alpha of Cronbach.

Table 2. Measures of central tendency and variability.

	Quality	Price	Technology	Training	Distribution channels	Competitiveness
N	25.00	25.00	25.00	25.00	25.00	25
Mean	29.40	19.72	20.56	24.68	20.56	114.9
Median	28.00	19.00	20.00	24.00	21.00	112.0
Mode	36.00	25.00	24.00	24.00	17.00	133.0
Standard deviation	4.87	4.34	2.74	4.66	3.34	15.8
Variance	23.75	18.87	7.50	21.72	11.17	248.5
Skewness	0.15	.038	-0.28	-0.36	-0.05	-0.04
Kurtosis	-1.15	-0.71	-0.99	-0.25	-1.03	-1.4
Range	17.00	17.00	9.00	18.00	11.00	45.0
Minimum	20.00	11.00	15.00	14.00	15.00	89.0
Maximum	37.00	28.00	24.00	32.00	26.00	134.0
Sum	735.00	493.00	514.00	617.00	514.00	2833.0

Source: Obtained information of the field investigation.

The volume of data that was obtained when applying the questionnaire to all the companies that export avocado to the United States of America, located in Uruapan, Michoacan, is shown in the Table 1. The information, of the previous table, concentrates the indicators for each one of the variables that are studied, it will be formed the Table 2.

RESULTS AND DISCUSSION

The companies that studied presented good competitiveness. The category that was repeated more was of 133 points. 50% of the companies are superficially (medium) of the value 112 points. The average of the companies is located in 114.9 points (good competitiveness). Also, 15,8 points are turned aside of the average (standard deviation). No company I describe like deficient its competitiveness (38 points). Companies 12, 17, 23, 2, 21, 13, 7, 24, 25, 5 and 10 –44%– described excellent their competitiveness. The scores tend to be located in average and elevated values. As far as the amount of dispersion of the data (variance) it was of 248,5 points.

Table 3. Descriptive Statistics and Correlations.

Variable	Mean	σ	1	2	3	4	5
1. Quality	29.40	4.87					
2. Price	19.72	4.34	.63				
3. Technology	20.56	2.74	.83	.64			
4. Training	24.68	4.66	.55	.58	.66		
5. Distribution channels	20.56	3.34	.28	.27	.39	.38	
6. Competitiveness	114.90	15.80	.85	.81	.89	.82	.55

Source: Obtained information of the field investigation.

$n=25$

$p<.01$

With respect to the variable quality, the effect that took place when applying the questionnaires to the study object was good quality. The medium one that was obtained was of 28 points. The average that threw was of 29,40 points, which indicate that the companies are in relation to the quality by above of the medium one. Also 4,87 points are turned aside of the average. Only 9 companies –36%– described them with excellent quality, without arriving no from them at the maximum value from 40 points. The slant that appeared in the quality of the encuestadas companies was of 0,154 points, representing a positive slant because the average is greater than the medium one. As far as the amount of dispersion of the data it was of 23,75 points.

The information that obtained when applying questionnaires to the exporting companies of avocado, with respect to the variable price was good, since the average that it observed was of 19,72, the category that was repeated more (fashion) was of 25 points. 50% of the companies are superficially (medium) of the value 19 points. Also, 4,34 points are turned aside of the average. Only 8 companies (32%) described to the variable price of their company like excellent and single a company obtained the highest level (28 points). The slant that appeared in the price of the interviewed companies was of 0,038 points, representing a positive slant because the average is greater than the medium one. As far as the amount of dispersion of the data (variance) it was of 18, 87 points.

TEST OF HYPOTHESIS

The general hypothesis that it affirms that the relation that exists between the exporting companies from avocado to the United States of America, located in Uruapan, Michoacán, and its competitiveness depends on the quality of the fruit that takes place for export, of its price, the used technology, the qualification of its personnel, and of the channels of distribution, was proven (table 2).

The first hypothesis that it affirmed that with one better quality obtained by means of the application of the quality norms, the improvement of the system of control of quality and the system of

inspection in the exporting companies from avocado to the United States of America, will bring like consequence a greater competitiveness, was proven, since it presented/displayed an index of considerable correlation (r) positive of 0,850 (table 2); whereas its coefficient of determination (r^2) were of 0,723, which means that a narrow entailment between the two variables exists.

The second hypothesis test, since a positive correlation of 0.811 was obtained considerable; whereas its coefficient of determination were of 0.658. al to determine a better price of the avocado, indicated by means of the market that supplies, its production costs and costs of commercialization; a greater competitiveness of the exporting companies from avocado will be maintained to the United States of America. The third hypothesis test, since it turned out to be the highest correlation of all the variables that studied $-0,888$ – what means that exists a very noticeable association between the two variables because when a high degree of technology, translated in machinery and modern equipment is controlled, use of technical attendance and infrastructure; a greater competitiveness of the exporting companies from avocado to the United States of America is guaranteed, whereas its coefficient of determination (r^2) were of 0,789, which represents that a positive entailment between the two variables exists considerable.

The fourth hypothesis that affirms that through a qualification based by means of the reeducation of the human resource, the integral systems of qualification and the investment; it will mean a greater competitiveness of the exporting companies from avocado to the United States of America, is approved. The previous thing is based on which the correlation (r) between the qualification and the competitiveness was of 0,820 and the determination coefficient was of 0,672, which symbolizes that a positive entailment between the two variables exists considerable.

The last hypothesis of this investigation test, because to better selection of the channels of distribution, interpreted by means of the design and administration of the distribution channel and the boarding; a greater competitiveness of the exporting companies from avocado to the United States of America is obtained. The previous thing, with base in which the relation between the channels of distribution and the competitiveness, according to the correlation of Pearson (r), was positive average $-0,550$ –, whereas its coefficient of determination were of 0,303, reason why exists a narrow entailment between the two variables.

CONCLUSIONS

1. The companies that export avocado of Uruapan, Michoacan to the United States of America, are competitive in 44% of the studied cases. The companies that turned out to be competitive were: 12, 17, 23, 2, 21, 13, 7, 24, 25, 5 and 10. 3, 50% of the companies are superficially (medium) of 112 points. In average, the companies are located in 114.92 (excellent competitive). However, 15,76 units of the scale are turned aside of the average.

2. One determined that the independent variables (quality, price, technology and qualification) strongly affect the competitiveness, since a positive entailment between the independent variables and the dependent variable with exception of the distribution channels exists, where was an effect is minor. La quality affects to the competitiveness in a 0.850; in 0.811 in 0.888 the 0.820 channel and, the technology, the price qualification of distribution in 0.550.

3. As it is observed, those that greater influence has it are the technology, followed of the quality and finalizing with the distribution channels.

4. Were two great groups of companies when applying the analysis of conglomerates: first formed by the companies 12, 17, 23, 2, 21, 13, 7, 24, 25 and 5, which are those that obtained the highest qualification in the variable competitiveness and a second remaining group of the companies that are not competitive.

5. The general hypothesis and the five hypotheses of work that were formulated validate in their totality.

6. A code of commerce practices is due to establish fruits to implant a customs Control of the labeled one, veracity of the information and the certification of the quality that the export avocado shows, with base in an official mark at the time of exporting itself.

7. It is necessary that all the companies of the sector count on complete information, exact and opportune of which it happens in the market. An is required that communicates the levels of prices, the tendencies, the volumes in inventory and the advances in the shipment from the avocado to the United States of America.

8. The precooked one that occurs to the avocado, is due to carry in plastic boxes of 400 kilograms. The truck must happen through a cold water curtain to 6 °C, with the purpose of lowering the temperature quickly to 100%; without curing it's introduced to the cold cameras.

9. It is required to invest in qualification; to carry out a good handling of human, technological and financial resources to establish efficient networks of distribution, with a service of quality, considering the price, punctuality in the service, quality in the product and security in the delivery of the product, that is to say, everything a process of development based on the satisfaction of the consumers.

10. Structure of the exporting companies is necessary to formalize organization them.

11. The channels of distribution are due to select more adapted to export to the United States of America; the tradition has been to sell wholesalers. Once selected the channel, it must be administered properly since an organization common in charge does not exist to distribute the avocado in the United States of America, if she had her exporter would not compete to each other.

12. The creation of Meetings of Trade is suggested, which are formed by producers and drug dealers of a product, that look for solutions their problems with an external minimum of aid. They are not dedicated to the transaction, but to support to its sector with promotions, certifications of quality, investigation, information of markets, lobbying and other workings for the development of the market.

13. To create a trade program that includes decisions on prices, characteristics of the product, promotion and channels of distribution, since is tried to increase the sales of avocado in the United States of America, and is conceived in winch of the following elements: to construct a Mexican image of the avocado in the mind of the consumers, like mechanism to differentiate the product from the one of the other nations that concur to the market of the United States of America, and they emphasize the quality and the price, before other variables, like the channel most important to compete with other countries and to place the Mexican avocado in that country.

14. The Creation of a scientific research center between the companies of the avocado sector of Uruapan, the educative Michoacan is suggested, and institutions superior æUniversities and Technologicæ, where investigations are made in two slopes: 1) In the improvement of the quality of the product that is exported to avoid sanitariums pressures of the market destiny, and 2) To develop bases that help the efficient commercialization of the avocado and improve the competitiveness of the companies that produce and commercialize that product in the United States of America.

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